

Work Order ID 85255

June-05-12 9:12:24 AM

85255

Page 1

Item ID: D4054-001

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Tube Assembly

Start Date: 05/06/2012 Start Qty: 6.00

6

Cust Item ID:

Required Date: 19/06/2012 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals: Process Plan: ML5Date: 12/06/05 Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

Draw Nbr

Revision Nbr

D4054

A

100

0.00

100

Small Fab

Small Fab

Memo

0.00

Small Fab

Bend tube as per Dwg D4054

Install sleeves and nuts

Flare ends as per Dwg D4054.

6 0 FF
12-07-06

110

QC5- Inspect part completeness to step on W/O

0.00

110

QC

Memo

0.00

Quality Control

8/12/12/12 / 6 PD 12-07-06

Work Order ID 85255

June-05-12 9:12:24 AM

85255

Page 2

Item ID: D4054-001

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Tube Assembly

Stop ***NS2***

Start Date: 05/06/2012 Start Qty: 6.00

6

Cust Item ID:

Required Date: 19/06/2012 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

Identify as per dwg & Stock Location: **193**

0.00

120

Packaging

Memo

0.00

Packaging

6

12/10/11

130

QC21- Final Inspection - Work Order Release

0.00

130

QC

Memo

0.00

Quality Control

CK

12/7/11

mf

12-07-10

Picklist Print

June-05-12 9:12:28 AM

Page 1

Work Order ID: 85255

85255

Parent Item: D4054-001

D4054-001

Parent Item Name: Tube Assembly

Start Date: 05/06/2012

Required Date: 19/06/2012

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP rev A 10.01.19 new issue EC verified by:DD

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|

AN818-8D

Purchased

No

100

Each

13.0000

2

12

AN818-8D

**

⑥ FF 12-07-06

Nut

Location

Loc Qty

Loc Code

ST325

122265

13

118112

4

120630

9

M6061T6T0.500W.049

Purchased

No

100

f

131.6409

1.78

11.24211

M6061T6T0 500W 049

**

⑥ FF 12-07-06

6061-T6 RD Tube .500 x.049W

Location

Loc Qty

Loc Code

MAT014

131.640851

117270

131.640851

11.24211

MS20819-8D

Purchased

No

100

Each

31.0000

2

12

MS20819-8D

**

⑥ FF 12-07-06

Sleeve

Location

Loc Qty

Loc Code

ST323

31

119531

20

120930

11

11

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------------------|--|--------------------------------------|---|-------------------|--|-------------|--------------|--------------|--|--|------------------------------------|------------------------------------|--|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|-----------------------------------|--|------------------------------------|------------------------------------|--------------------------------|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Prod. Eng. Coord. <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> <td></td> </tr> </table> | | | | | | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Supplier <input type="checkbox"/> | | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Other <input type="checkbox"/> | |
| Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Engineering <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | |
| Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Quality <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Supplier <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | |
| Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Other <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | | | | | | | | | | | | | | | | | |
| Doc/Data <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operator <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Offset/Setup <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Unauthorized <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| FAULT CATEGORY | | | | | | | |
|---|--|---|--|---|--|--|--|
| Landing Gear <input type="checkbox"/> Bending Passes Below Min <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimp at Bending <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Other <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Ripples on Inner Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | Hardware <input type="checkbox"/> Breaking <input type="checkbox"/> Missing <input type="checkbox"/> Size/Length <input type="checkbox"/> Spinning <input type="checkbox"/> Threading <input type="checkbox"/> Wrong Drill Holes <input type="checkbox"/> Misaligned <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Undersized <input type="checkbox"/> Too Many | General <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Documentation/Data <input type="checkbox"/> Finish <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Inspection Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Jigs/Fixtures/Tooling <input type="checkbox"/> Kit Incorrect <input type="checkbox"/> Kit Missing | <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Off-Set <input type="checkbox"/> Orientation Misread <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Lost <input type="checkbox"/> Part Moved <input type="checkbox"/> Raw Material | <input type="checkbox"/> Set-up <input type="checkbox"/> Supplier <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other | | | |

| ITEM NO. | QTY | P/N | DESCRIPTION |
|----------|-----|------------|---------------|
| 1 | X | D4054-001 | TUBE ASSEMBLY |
| 2 | 2 | MS20819-8D | SLEEVE |
| 3 | 2 | AN818-8D | NUT |

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 85255 MLJ
12/06/05

RELEASED
2010-01-14
MD

D4054-001 TUBE ASSEMBLY

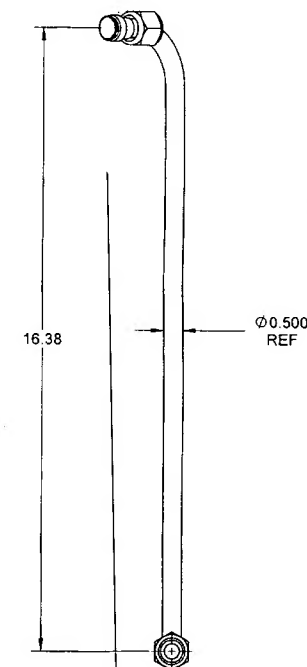
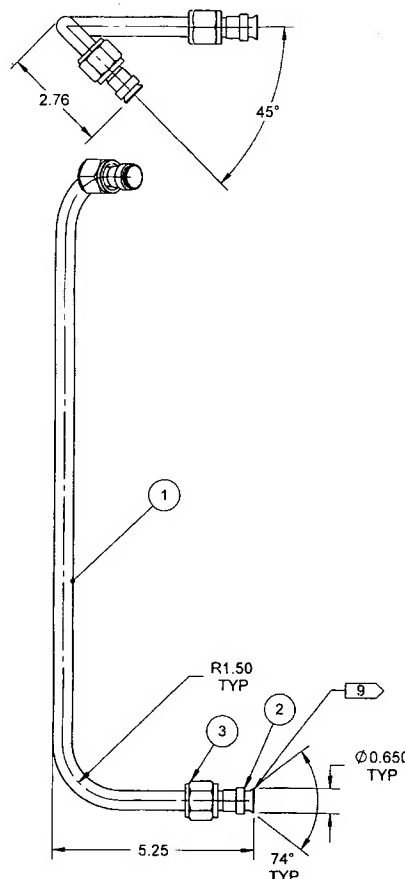
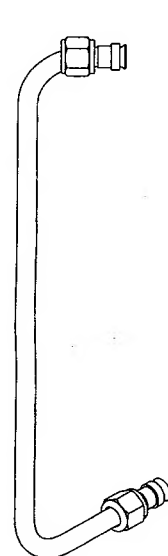
NOTES:

- 1) MATERIAL: 6061-T6 SEAMLESS ALUMINUM TUBING 0.500 O.D. x 0.049 WALL
PER WW-T-700/6
REF DART SPEC M6061T60.500W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4054-001" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.20 lbs
- 8) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATE D4054-001T1
- 9) TUBES TO BE FLARED 37° TO MATE WITH MS33514 FITTINGS, TYPICAL
- 10) ENSURE SEAMLESS TUBING IS USED

| A NEW ISSUE | | RF 09.12.30 | |
|-------------|-------------|--|--------------|
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | RF | DRAWING NO. | REV. A |
| MFG. APPR. | RF | D4054 | SHEET 1 OF 3 |
| APPROVED | RF | TITLE | SCALE |
| DE APPR. | RF | TUBE ASSEMBLIES | NTS |
| DATE | 09.12.30 | COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. | |

| ITEM | QTY -003 | P/N | DESCRIPTION |
|------|-------------|------------|---------------|
| 1 | X | D4054-003 | TUBE ASSEMBLY |
| 2 | 2 | MS20819-8D | SLEEVE |
| 3 | 2 | AN818-8D | NUT |

9525T



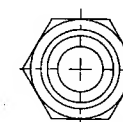
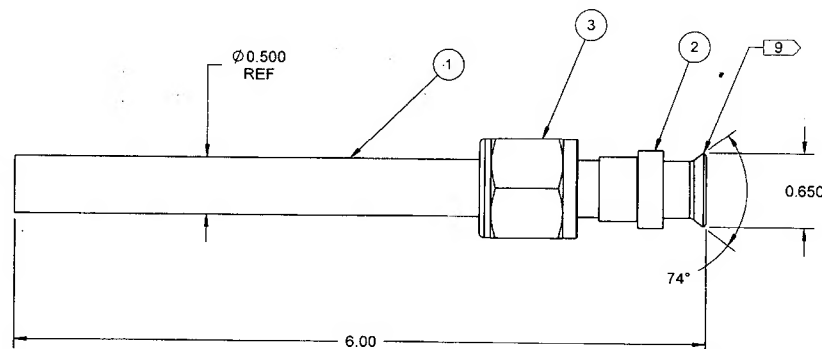
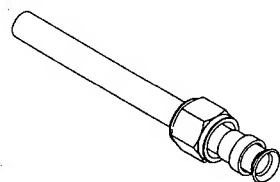
NOTES:

- 1) MATERIAL: 6061-T6 SEAMLESS ALUMINUM TUBING 0.500 O.D. x 0.049 WALL
PER VWV-T-700/6
REF DART SPEC M6061T60.500W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4054-003" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.21 lbs
- 8) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATE D4054-003T1
- 9) TUBES TO BE FLARED 37° TO MATE WITH MS33514 FITTINGS, TYPICAL
- 10 ENSURE SEAMLESS TUBING IS USED

D4054-003 TUBE ASSEMBLY

| | | | |
|------------|----------|--|--------------|
| DESIGN | RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | RF | DRAWING NO. | REV. A |
| MFG. APPR. | RF | D4054 | SHEET 2 OF 3 |
| APPROVED | RF | TITLE | SCALE |
| DE APPR. | RF | TUBE ASSEMBLIES | NTS |
| DATE | 09.12.30 | COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. | |

| ITEM | QTY | P/N | DESCRIPTION |
|------|-----|------------|---------------|
| 1 | X | D4054-009 | TUBE ASSEMBLY |
| 2 | 1 | MS20819-8D | SLEEVE |
| 3 | 1 | AN818-8D | NUT |



D4054-009 TUBE ASSEMBLY

NOTES:

- 1) MATERIAL: 6061-T6 SEAMLESS ALUMINUM TUBING 0.500 O.D. x 0.049 WALL
PER WW-T-700/6
REF DART SPEC M6061T60.500W.049
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4054-009" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.07 lbs
- 8) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATE D4054-009T1
- 9) TUBES TO BE FLARED 37° TO MATE WITH MS33514 FITTINGS
- 10) ENSURE SEAMLESS TUBING IS USED

RELEASED
2010-01-14

| | | | |
|------------|--------------------|---|--------------|
| DESIGN | RF | DART AEROSPACE LTD | |
| DRAWN | RF | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED | <i>[Signature]</i> | DRAWING NO. | REV. A |
| MFG. APPR. | <i>[Signature]</i> | D4054 | SHEET 3 OF 3 |
| APPROVED | <i>[Signature]</i> | TITLE | SCALE |
| DE APPR. | <i>[Signature]</i> | TUBE ASSEMBLIES | NTS |
| DATE | 09.12.30 | COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD | |